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| 10/507,337 | 04/25/2005 | William V. Glenn Jr. | GLENN-69462 | 2857 |
| 24201 | 7590 | 05/27/2009 | | |
| FULWIDER PATTON LLP HOWARD HUGHES CENTER 6060 CENTER DRIVE, TENTH FLOOR LOS ANGELES, CA 90045 | | | EXAMINER FERNANDEZ, KATHERINE L | |
| | | | ART UNIT 3768 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/507,337

Applicant(s)

GLENN JR. ET AL.

Examiner

KATHERINE L. FERNANDEZ

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2007.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 09 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 11/19/2007; 3/19/2009
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1-3, 5, 9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: calculating a voxel value at the location of each step of the ray and adding the voxel value to an image buffer. Although the claim recites how the ray is projected, it is unclear as to where and how data is collected that represents the flattened view.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuji (JP2000051207) as cited by applicant. (Note that examiner is using the English translation as provided by applicant).

Yuji disclose a method for generating a view of the tissue structures within a thickness dimension of a wall of a tubular structure of a body including tissue adjacent the exterior of the wall, comprising the steps of: a) providing a data set containing data representing a three-dimensional volume representing a tubular structure (i.e. colon) of

the body taken along a longitudinal axis of the tubular body, the tubular body having a lumen defined by a wall (see Abstract; paragraphs [0029], [0045]; see Figures 2-3 and 6); b) selecting a starting point along a central pathway disposed along the longitudinal axis of the tubular body (paragraph [0039]; see Figure 6); c) projecting a ray towards the wall a selected distance by stepping towards the wall along the ray from the starting point, the distance selected such that the ray steps into and through the thickness of the wall (paragraphs [0034]-[0036]; see Figure 3); d) calculating a voxel value at the location of each step of the ray (paragraphs [0029]-[0032], [0034]-[0036]); adding the voxel value to an image buffer (paragraphs [0029]-[0032]); incrementing the angular projection of the ray ([0030]); g) determining if the angular projection of the ray has been incremented 360 degrees since the starting point was selected (paragraphs [0030]-[0031]); h) projecting a ray having the incremented angulation toward the wall (paragraphs [0030]-[0031]); i) repeating steps d) through h) until the angular projection of the ray has been incremented 360 degrees (paragraphs [0030]-[0031]; see Figures 4 and 6); and j) displaying a subsurface volume image representing tissue structure present within the thickness dimension of the wall (paragraph [0030]; see Figure 4).

Although they do not specifically disclose that the angular projection of the ray is incremented by one degree, they do disclose that the thickness of the tube wall is acquired through angles 0-360 degrees in all respects vertical to a pipe direction vector, and it would have been obvious to one of ordinary skill in the art to optimize the increment between subsequent projections to be one degree in order to accurately assess the wall thickness.

5. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuji, as applied to claim 7 above, and further in view of Vining et al. (U.S. Patent No. 5,920,319).

Regarding claims 10 and 12, as discussed above, Yuji meets the limitations of claim 7. However, they do not disclose that the 3D volume data set is compared to a library of geometrical patterns representative of predetermined abnormalities, nor that a structure is identified as abnormal if the structure is determined to match at least one of the geometrical patterns within a predetermined tolerance. They also do not disclose that further processing of the identified abnormal structure is performed to determine if the identified structure is abnormal. Vining et al. disclose a system and method for displaying a 3D rendering of a structure having a lumen and for automatically analyzing such structures for potential abnormalities (column 1, lines 15-19). They disclose that their method of identifying abnormal structures (lesions) involves forming populations of potential abnormalities based on vertices on the wireframe model associated with a library of geometrical patterns, such as abnormal wall thickness, abnormal shape, and abnormal curvature (column 10, lines 56- 67 through column 11, lines 1-10). Further, they disclose that populations with sizes below a minimum value are eliminated from being identified as abnormal (Figure 1, 46). Their method also involves further processing the identified abnormal structure to determine if the identified structure is not abnormal (column 11, lines 22-35). At the time of the invention, it would have been obvious to one of ordinary skill in the art to include the above steps to the method of Yuji, as taught by Vining et al., in order to provide a more efficient, less time-consuming,

less expensive, and more accurate technique for identifying abnormalities (column 1, lines 46-66).

Response to Arguments

6. Applicant's arguments with respect to claims 1-3, 5-8 and 9-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **KATHERINE L. FERNANDEZ** whose telephone number is (571)272-1957. The examiner can normally be reached on 8:30-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/
Primary Examiner, Art Unit 3768